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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,639	06/27/2003	Marc Andre Boillot	CE10967JAI016	8714

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EXAMINER	
HARPER, V PAUL	

ART UNIT	PAPER NUMBER
2654	

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/607,639	BOILLOT ET AL.	
	Examiner	Art Unit	
	V. Paul Harper	2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17* is/are rejected.

7)☒ Claim(s) *1,9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/27/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The Examiner has considered the references listed in the Information Disclosure Statement dated 06/27/03. A copy of the Information Disclosure Statement is attached to this office action.

Oath/Declaration

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02. The oath or declaration is defective because: the first oath submitted was the only oath signed by the first inventor but did not list all three inventors.

Claim Objections

3. Claim 1 is objected to because in line 2 the word "couple" should be replaced with –coupled--.

Claim 9 is objected to because in line 5 the word "couple" should be replaced with –coupled--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 5, 7, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rayskiy (U.S. 6,278,387 B1) in view of Selly (WO 02/09090 A2).

Regarding **claim 1**, Rayskiy discloses an audio encoder and decoder utilizing time scaling for variable playback. Rayskiy's system includes:

- an audio output module coupled to at least one ... fixed-length outbound audio buffer for playing audio therefrom through a speaker (Fig. 5, "Output Buffer," col. 6, lines 15-19, Fig. 1, item 121),
- wherein the audio is stored as a series of sequential time-based audio samples, which are portioned into sequential frames (abstract, "frames are formed within the buffers"; Fig. 4, item 415, "Output Interface" where the D/A converter further implies the presence of a series of samples);
- a SOLA (Synchronized OverLap and Add) function with a selectable rate variable, the SOLA function operating on the first portion of the audio samples and the second portion of the audio samples with an output of the SOLA function being written in the ... fixed-length outbound audio buffer ... (abstract, Fig. 5,

"Input Buffer," "Output Buffer," and SOLA; Fig. 1, item 113, rate adjustment, col. 6, line 63, C_{scale}).

But Rayskiy fails to specifically teach the following:

a) a first modulo pointer for modulo indexing into the circular fixed-length outbound audio buffer where a first portion of audio samples is indexed;

b) a second modulo pointer for modulo indexing into the circular fixed-length outbound audio buffer where a second portion of the audio samples is indexed so that the first portion and the second portion of the audio samples are sequential in time;

c) a cross correlation function for determining a position of maximum correlation between the first portion of the audio samples and the second portion of the audio samples;

d) a third modulo pointer for modulo indexing into the circular fixed-length outbound audio buffer at the position of maximum correlation.

However, the examiner contends that this concept was well known in the art, as taught by Selly.

In the same field of endeavor, Selly discloses a continuously variable time scale modification of digital audio signals. Selly's system includes three circular buffers that store input, output, and scaled audio signals (Fig. 4, p. 9, line 10-20). Selly describes a first modulo pointer ..., a) above (Fig. 4, item 40, "input buffer"; col. 6, line 56 through col. 7, line 3); a second modulo pointer ..., b) above (Fig. 4, item 60; col. 6, line 56 through col. 7, line 3); a cross correlation function ..., c) above (abstract, "a correlation function is calculated ..."; col. 4, lines 19-25 and

lines 30-45); and a third modulo pointer ..., d) above (col. 4, lines 19-24, "correlation function to determine the optimal offset"; Fig. 2).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Rayskiy by specifically providing the features, as taught by Selly, because it is well known in the art at the time of invention as a highly accurate way to perform time scale modification (Selly, p. 5, lines 3 and 4).

Regarding **claim 2**, Rayskiy in view of Selly teaches everything claimed, as applied above (see claim 1); in addition, Rayskiy teaches "an audio loopback path to present audio received from a user via an audio input module to the circular fixed-length outbound audio buffer of the audio output module so that audio is capable of being heard by a user" (Fig. 1, item 125--1st audio signal, and item 119—2nd audio signal; col. 1, lines 45-51, where the second audio signal may be a compressed bit stream of the first audio signal, i.e., loopback; Fig. 1, item 121, speaker).

Regarding **claim 5**, Rayskiy in view of Selly teaches everything claimed, as applied above (see claim 1); in addition, Rayskiy teaches the use of "a user input interface for receiving a user selection for adjusting the selectable rate variable" (Fig. 1, item 113, col. 3, "the user can set the desired playback rate").

Regarding **claim 7**, Rayskiy in view of Selly teaches everything claimed, as applied above (see claim 1); in addition, Rayskiy teaches that "the user input interface for receiving a user selection includes a selection for increasing the selectable rate variable of audio playback and a selection for decreasing the selectable rate variable of audio playback" (Fig. 1, item 113, col. 1, lines 30-34; col. 1, lines 41-51, "variable playback of the audio signal" which necessarily includes the ability to increase and decrease the playback rate; col. 7, lines 1-2, C_{scale}).

Regarding **claim 15**, this claim has limitations similar to claim 1 and is rejected for the same reasons.

Regarding **claim 16**, this claim has additional limitations similar to claim 5 and is rejected for the same reasons.

5. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rayskiy in view of Selly, and further in view of Bhadkamkar et al. (U.S. Patent 5,893,062), hereinafter referred to as Bhadkamkar.

Regarding **claim 3**, Rayskiy in view of Selly teaches everything claimed, as applied above (see claim 2). Rayskiy teaches the ability to set the user rate (Fig. 1, item 113), but Rayskiy does not specifically teach the use of "a vocoder for detecting a word rate in the audio loopback path using at least one of: an

energy decision metric; a voicing decision metric; and a tonality measure." However, the examiner contends that this concept was well known in the art, as taught by Bhadkamkar.

In the same field of endeavor, Bhadkamkar discloses a system with variable rate video playback and synchronized audio. In addition, Bhadkamkar calculates an energy term to calculate the rate of the spoken portions (abstract, col. 3, lines 45-67). (Note: vocoder here is interpreted to mean a device for extracting features for the speech, e.g. energy).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Rayskiy in view of Selly by specifically providing the capability, as taught by Bhadkamkar, because it is well known in the art at the time of invention as an aid in modifying the playback rate (Bhadkamkar, col. 3, lines 45-50).

Regarding **claim 4**, Rayskiy in view of Selly and Bhadkamkar teaches everything claimed, as applied above (see claim 3), but Rayskiy does not specifically teach "the word rate is used to set the selectable rate variable." However, the examiner contends that this concept was well known in the art, as taught by Bhadkamkar.

Bhadkamkar further discloses the determination of the target display rate based upon the rate the spoken portions of the audio data are uttered (col. 3, lines 55-65).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Rayskiy in view of Selly by specifically providing the capability, as taught by Bhadkamkar, because it is well known in the art at the time of invention for the purpose of modifying the speaking rate to match a particular requirement (Bhadkamkar, col. 3, lines 45-50).

6. Claims 6 and 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rayskiy in view of Selly and Goldhor et al. (U.S. Patent Application Publication 2002/0052967 A1), hereinafter referred to as Goldhor.

Regarding **claim 6**, Rayskiy in view of Selly teaches everything claimed, as applied above (see claim 1). But Rayskiy does not specifically teach "comprising a receiver for receiving the selectable rate variable from a second device." However, the examiner contends that this concept was well known in the art, as taught by Goldhor.

In the same field of endeavor, Goldhor discloses a method for distributing audio over networks, which includes the ability to modify the time-scale playback rate (abstract) and to send playback rate information to the playback device (¶[0113]).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Rayskiy in view of Selly by specifically providing the capability, as taught by Goldhor, because it is well

known in the art at the time of invention for the purpose of conserving network bandwidth (¶[0113]).

Regarding **claim 17**, this claim has additional limitations similar to claim 6 and is rejected for the same reasons.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rayskiy in view of Selly and Mahfuz ("Packet Loss Concealment for Voice Transmission over IP Networks" Master's Thesis, McGill University, Sept. 2001, pp. 51-56).

Regarding **claim 8**, Rayskiy in view of Selly teaches everything claimed, as applied above (see claim 1); furthermore as stated above Rayskiy teaches the SOLA technique, but Rayskiy does not specifically teach "a copying function for inserting a copy of the first portion the audio samples in between the first portion and the second portion of the audio samples so as to be sequential in time there between." However, the examiner contends that this concept was well known in the art, as taught by Mahfuz.

Mahfuz teaches techniques for time-expansion of a voice signal including the insertion of duplicate samples to expand the signal (p. 52, Fig. 4.3; note the duplication of samples from the original signal in the rate-modified signal).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Rayskiy in view of Selly by

specifically providing the features, as taught by Mahfuz, because it is well known in the art at the time of invention as a standard technique for expanding the time-scale using SOLA.

8. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rayskiy in view of Selly and Snelgrove et al. (WO 01/74040 A2), hereinafter referred to as Snelgrove

Regarding **claim 9**, Rayskiy discloses an audio encoder and decoder utilizing time scaling for variable playback. Rayskiy's system includes the following:

- a loopback path to provide user definable speed adjustment in audio feedback via a loopback rate to a user (Fig. 1, item 125--1st audio signal, and item 119—2nd audio signal; col. 1, lines 45-51, where the second audio signal may be a compressed bit stream of the first audio signal, i.e., loopback);
- a user interface for adjusting the loopback rate (Fig. 1, item 113, e.g. col. 3, lines 22-25).

Although Rayskiy discloses a communication device (see Fig. 1, item 117), Rayskiy does not specifically teach "talking into a wireless messaging device." However, the examiner contends that this concept was well known in the art, as taught by Snelgrove.

In the same field of endeavor, Snelgrove discloses a voicemail system for wireless systems the uses variable playback rates (p. 1, line 28 through p. 11, line 1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Rayskiy by specifically providing the features, as taught by Snelgrove, because it is well known in the art at the time of invention as a way to efficiently use available bandwidth (Snelgrove, p. 1, line 28 through p. 11, line 1).

Furthermore, Rayskiy teaches that the audio output is coupled a buffer (Fig. 5, item 507), but Rayskiy does not specifically teach "wherein the loopback circuit includes an audio output module coupled to at least one circular outbound audio buffer for playing audio for the user to hear therefrom."

However, the examiner contends that this concept was well known in the art, as taught by Selly.

In the same field of endeavor, Selly discloses a continuously variable time scale modification of digital audio signals. Selly's system includes the use of a circular output buffer (Fig. 4, "Output Buffer," p. 9, lines 10-20).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Rayskiy by specifically providing the features, as taught by Selly, because it is well known in the art at the time of invention as a highly accurate way to perform time scale modification (Selly, p. 5, lines 3 and 4).

Regarding **claim 10**, Rayskiy in view of Selly and Snelgrove teaches everything claimed, as applied above (see claim 9). In addition, Rayskiy teaches the use of "a SOLA (Synchronized OverLap and Add) function operating on the audio" (abstract, Fig. 5), but Rayskiy does not specifically teach that a SOLA function operating on audio "in the circular outbound audio buffer, which is stored as a series of sequential time-based audio samples." However, the examiner contends that this concept was well known in the art, as taught by Selly.

Selly further discloses the use of a circular output buffer for processing audio signals (p. 9, lines 10-20, Fig. 4, item 60).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Rayskiy by specifically providing the features, as taught by Selly, because it is well known in the art at the time of invention as a highly accurate way to perform time scale modification (Selly, p. 5, lines 3 and 4).

Regarding **claim 11**, Rayskiy in view of Selly and Snelgrove teaches everything claimed, as applied above (see claim 10); furthermore, Rayskiy teaches "the loopback rate is set by a user" (Fig. 1, item 113), where the support for a "wireless messaging device" was taught by Snelgrove in the rejection of claim 9.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rayskiy in view of Selly and Snelgrove and further in view of Goldhor.

Regarding **claim 12**, this claim has limitations similar to claim 6 and is rejected for the same reasons (note: loopback is similar to local playback).

10. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rayskiy in view of Selly, Snelgrove and further in view of Bhadkamkar.

Regarding **claim 13**, this claim has additional limitations similar to claim 3 and is rejected for the same reasons.

Regarding **claim 14**, this claim has additional limitations similar to claim 4 and is rejected for the same reasons.

Citation of Pertinent Art

11. The following prior art made of record but not relied upon is considered pertinent to the applicant's disclosure:

- Nejime et al. (U.S. Patent 5,717,818) disclose an audio signal storing apparatus having a function for converting speech speed without changing the pitch of the input speech.
- Arons ("Techniques, Perception, and Applications of Time-Compressed Speech," Proc. of 1992 Conference of the American Voice I/O Society, Sept 1992) teaches the use of variable speech with voice mail systems.

- He et al. ("User Benefits of Non-Linear Time Compression," Technical Report, MSR-TR-2000-96, Microsoft Corporation, Sept. 21, 2000), teach various applications of time-compressed speech.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to V. Paul Harper whose telephone number is 703 305-4197. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on 703 305-9645. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

V. Paul Harper

VPH/vph

Vijay Chawan 10/28/04

VIJAY CHAWAN
PRIMARY EXAMINER